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APPLICATION FOR
U.S. LETTERS PATENT
FOR

"REMOTELY CONTROLLED FOOTWEAR AND FOOTWEAR KIT"

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CONFIDENTIAL

"REMOTELY CONTROLLED FOOTWEAR AND FOOTWEAR KIT"

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates to footwear, such as sneakers and, more particularly, to a footwear that allows spinning discs or the like to be rotated clockwise or counterclockwise on the lateral side of a shoe member.

2. General Background

10 Currently, illuminating fashion footwear, such as sneakers, sandals, platform shoes, etc., have embedded therein lights that strobe or blink on and off as the wearer walks. The illuminated lights, when on, attract the attention of nearby observers. However, the illumination of the lights is generally activated when
15 the wearer walks and are not remotely controlled.

Several patents have been patented which are aimed at remotely controlled skates.

Japanese Patent No. 6-134076 discloses a remotely controlled and electronically powered roller skate.

20 U.S. Patent No. 6,059,062 issued to EMPower Corporation of Cambridge, Massachusetts, on the

application of D.H. Staelin, et al., discloses a powered roller skate including a computerized controller to control the battery driven electric motor coupled to the drive wheels through a gear system.

5 U.S. Patent No. 6,428,050 issued to A.K. Brandley, et al., discloses a motorized skate employing a hand-held remote control to control the operation of the electric motors which power the drive wheels.

10 U.S. Patent No. 4,355,482 issued to Mattel, Inc., of Hawthorne, California, on the application of J. Sapkus, et al., discloses a roller skating doll having powered roller skates and, a controller (including remote transmitter and receiver within the body of doll) to remotely control the operation of the electric motors
15 and therefore, the drive wheels through a gear system.

As will be seen more fully below, the present invention is substantially different in structure, methodology and approach from that of powered footwear.

The term lateral herein references the lateral side
20 of a foot and, thus, that side of a shoe when worn supports the lateral side of the foot.

SUMMARY OF THE PRESENT INVENTION

The preferred embodiment of footwear kit of the present invention solves the aforementioned problems in a straight forward and simple manner.

5 Broadly, the present invention contemplates remotely control footwear comprising: right and left shoe members each having a sole, each sole comprising: front and rear rotating discs coupled along a lateral side of said sole, said front and rear rotating discs
10 provide an appearance of rotating wheels when rotating.

The present invention further contemplates footwear having right and left shoe members that provide an illusion of a vehicle and the front and rear rotating discs provide the appearance of rotating wheels.

15 The present invention further contemplates a remote controlled motorized rotating assembly housed in the sole and coupled to the front and rear rotating discs. A remote controller, is also provided for controlling a direction of rotation of and braking of the front and
20 rear rotating discs.

Moreover, the present invention contemplates, a

footwear kit that includes footwear (right and left shoe members) having embedded therein a remote controlled motorized rotating assembly, a remote controller, a plurality of discs and optional accessories such as carrying case and pump.

In view of the above, an object of the present invention is to provide footwear that includes a sole provided with an inflatable chamber and a pumping port for filling said inflatable chamber with air via a pump.

Another object of the present invention is to provide footwear that provides rotatable discs giving the illusion of a rotating wheel only along the lateral sides of right and left shoe members.

In view of the above, a feature of the present invention is to provide footwear that is comfortable.

Another feature of the present invention is to provide a footwear that is attractive and which can change the color or decorative design of discs to change the appearance of the footwear.

A further feature of the present invention is to provide footwear that is relatively simple structurally.

A still further feature of the present invention is to provide a footwear kit that is convenient to use.

The above and other objects and features of the present invention will become apparent from the
5 drawings, the description given herein, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWING

For a further understanding of the nature and objects of the present invention, reference should be had to the following description taken in conjunction
5 with the accompanying drawings in which like parts are given like reference numerals and, wherein:

FIGURE 1 illustrates an elevational view of the lateral side of a remote-controlled footwear shoe member of the footwear kit in accordance with a
10 preferred embodiment of the present invention;

FIGURE 1A illustrates the remote controller of the footwear kit in accordance with the present invention;

FIGURE 1B illustrates the optional pump of the
15 footwear kit in accordance with the present invention;

FIGURE 1C illustrates the optional carry case of the footwear kit in accordance with the present invention;

FIGURE 2 illustrates an elevational view of
20 the lateral side of a remote-controlled footwear shoe

member of the present invention with the front and rear rotatable discs removed;

FIGURE 3 illustrates an elevational view of a second embodiment of a lateral side of a remote-controlled footwear shoe member with the front and rear
5 rotatable discs removed;

FIGURE 4 illustrates a top view of the rear rotatable disc of the embodiment of **FIGURE 2**;

FIGURE 5 illustrates a top view of the rear
10 rotatable disc of the embodiment of **FIGURE 2**; and,

FIGURE 6 illustrates a general block diagram of the remote controlled motorized rotating assembly.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings and in particular **FIGURES 1, 1A, 1B, and 1C**, the components of the footwear kit of the present invention are shown. The footwear kit
5 includes footwear **10** (only one shoe member shown) having embedded therein a remote controlled motorized rotating assembly **30** (**FIGURE 6**), remote controller **40**, a plurality of discs **50a, 50b** and **50c** and optional accessories such as carrying case **60** and pump **70**.

10 In the exemplary embodiment, the footwear **10** is sneakers (whether high top or low top), as best seen in the elevational views of **FIGURES 1, 2** and **3**. The type of footwear **10** can be a variety of styles and types. Sneakers of the exemplary embodiment includes a rubber,
15 rubber-like or synthetic sole **12**, wherein rubber-like is defined as any material that is resilient or semi-resilient. Other types of shoes may include heels, a platform sole and/or a shoe sole made of leather or other types of synthetic material.

20 The footwear **10** of the present invention includes

a shoe sole **12** that is constructed to house therein the remote controlled motorized rotating assembly **30** (**FIGURE 6**) and forms front and rear lateral openings **17a** and **17b**, as best seen in **FIGURE 2**. In the exemplary embodiment, the openings **17a** and **17b** are circular. Description of each footwear style is prohibitive. Thus, the described exemplary embodiment set forth in more detail below is not intended to be limited to sneakers.

The footwear **10** further includes an upper foot enclosure **14** and enclosure fastening means **16**. The upper foot enclosure **14** includes a foot support member **15a** dividing the upper foot enclosure **14** from the shoe sole **12**. With reference to **FIGURE 2**, the upper foot enclosure **14** includes a lateral heel enclosing panel **15b** integrated with the foot support member **15a** to fully enclose the heel and a lateral toe enclosing panel **15c**. The lateral toe enclosing panel **15c** is also integrated with the foot support member **15a** to fully enclose the toe area.

In the exemplary embodiment, the upper foot enclosure **14** may be made of canvas, leather, or synthetic

materials. The enclosure fastening means **16** comprises shoe laces functioning in a conventional manner. Nevertheless, other fastening means **16'** can be substituted such as hook and loop straps, as best seen in **FIGURE 3**, VELCRO® straps, zippers, or any combination thereof. Since some of the upper foot enclosures **14** are made of elastic material or fibers, the upper foot enclosure **14** may be capable of stretching when a foot is inserted. Therefore, the enclosure fastening means **16** or **16'** may be omitted.

Regarding the shoe sole **12**, the shoe sole **12** forms a hollow compartment below the foot support member **15a** for housing therein the remote controlled motorized rotating assembly **30** (**FIGURE 6**). The compartment, preferably, being isolated from the upper foot enclosure **14**. The front and rear lateral openings **17a** and **17b** may be dimensioned to expose part of the lateral heel enclosing panel **15b**, the foot support member **15a** and the lateral toe enclosing panel **15c** when the discs **50a** and **50b** are removed.

As can be appreciated, a shoe member has lateral and medial sides. While the present invention describes the sole and the rotating discs along the lateral side, duplication of the components for rotating discs along the medial side can be provided. However, the rotating discs will be best observed from the lateral side of a foot.

Furthermore, the combination of the illustrations and arrangement of the front and rear rotating discs **50a** and **50b**, the orientation of related openings **17a** and **17b** in the shoe sole **12**, sole construction and the upper foot enclosure **14** is arranged to provide footwear **10** that resembles a moving vehicle or hot rod. The rotating discs **50a** and **50b** gives the appearance or illusion of a rotating wheel engaging the ground. However, the rotating disc **50a** and **50b** do not function to move the shoes and do not engage the ground.

To enhance the illusion of rotating wheels, the discs **50a** and **50b** have illustrated thereon a design of a hubcap or other spoke arrangement. Nevertheless, other

disc designs may be substituted. For example, the discs
50a, **50b** and **50c** may be color and design coordinated to
form a set. The kit may include multiple sets of
differently colored and/or designed discs that are
5 interchangeable.

In the embodiment of **FIGURE 1**, the front rotating
disc **50a** is smaller than the rear rotating disc **50b**, as
best seen in **FIGURES 4** and **5**. Alternately, the front
rotating disc **50a** and the rear rotating disc **50b** could be
10 approximately the same size, as best seen in **FIGURE 3**.

As best seen in **FIGURES 2** and **3**, the front gear and
axle assembly **36a** is positioned below the foot support
member **15a** and is aligned substantially along a center of
the opening **17a**. Likewise, the rear gear and axle
15 assembly **36b** is positioned below the foot support member
15a and is aligned substantially along a center of the
opening **17b**.

The discs **50a** and **50b** snap onto mounts on the end
of axles. The discs **50a** and **50b** merely turn in the
20 openings **17a** and **17b** on via front and rear gear and axle

assemblies **36a** and **36b**.

The remote controlled motorized rotating assembly **30**
(**FIGURE 6**) includes a motor **32** powered by battery **34**,
front and rear gear and axles assemblies **36a** and **36b**
5 (gear train). The motor **32** is activated direction control
and braking signals received by infrared (IR) receiver **38**
from remote controller **40**.

Remote controller **40** is a compact hand-held unit
adapted to be carried in a shirt or pants pocket or carry
10 case **60**. The remote controller **40** includes a housing **41**
with a plurality of control keys **42a**, **42b**, and **42c** on a
front panel. In the preferred embodiment, the remote
controller **40** communicates via infrared communications
though IR transmitter **44** to infrared (IR) receiver **38**.
15 The plurality of keys includes an forward motion key **42a**,
rearward motion key **42b** and braking key **42c**.

The forward motion key **42a** and rearward motion key
42b activate the direction control module **46** to rotate
the discs **50a**, **50b** and **50c** in clockwise or
20 counterclockwise directions on command. The braking key

42c activates the brake control module **47** to stop the rotation of the discs. The remote controller **40** includes a battery **48** which is stored in the housing **41** and which is adapted to be replaced.

5 Carrying case **60** comprises a brief case that is dimensioned to support therein the footwear **10** (right and left shoe members), the remote controller **40**, pump **70** and a plurality of discs **50a**, **50b** and **50c**. The carrying case **60** in general includes top and bottom case members (only
10 the top member shown **62**) that are hingedly attached together and handle **64**. The top and bottom case members are secured together via locking members **65**.

 The top case member **62** includes window **63** for rotating therein disc **50c** connected to a gear train (gear
15 and axle assembly) which is powered by a battery. Reference to the block diagram in **FIGURE 6** includes the general circuitry. The battery powered gear train is remotely controlled and activated by remote controller
20 **40**. The remote controller **40** controls discs **50a**, **50b** and **50c** with the same control signals.

Remote controller **40** can be designed to control discs **50a**, **50b** and **50c** independently or simultaneously or independently (e.g., one set of discs turn in one direction while the other sets remain stationary or turn
5 in the other direction).

In the exemplary embodiment, the shoe sole **12** has an underside-arch **13** having a port **75** formed therein. The port **75** is in communication with an inflatable chamber **72** within the compartment of the shoe sole **12**. The pump **70**
10 when coupled to the port **75** serves to inflate chamber **72**.

Because many varying and differing embodiments may be made within the scope of the inventive concept herein taught and because many modifications may be made in the embodiment herein detailed in accordance with the
15 descriptive requirement of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in a limiting sense.

What is claimed as invention is: